

**MITIGATION ACTION PLAN**

**JEA CIRCULATING FLUIDIZED BED  
COMBUSTOR PROJECT**

**DUVAL COUNTY, JACKSONVILLE, FL**

**December 2000**

In June 2000, the Department of Energy (DOE) issued a Final Environmental Impact Statement (EIS) for the JEA Circulating Fluidized Bed Combustor Project (DOE/EIS-0289). Based on the EIS, DOE issued a Record of Decision (ROD) on December 9, 2000 (*Federal Register*, Vol. 65, No. 236, pages 76614 - 76621]. The ROD expressed pollution prevention measures and commitments to mitigate potential adverse impacts associated with DOE's course of action directed in the ROD.

This Mitigation Action Plan (MAP) outlines the mitigation and pollution prevention commitments identified in both the ROD and the EIS for the JEA Circulating Fluidized Bed Combustor Project, Jacksonville, FL. DOE prepared this MAP in accordance with 10 CFR §1021.331.

The JEA EIS Document Manager will update the MAP. There will be an initial (near-term) survey of baseline status against the mitigation and pollution prevention commitments. There will be 6-month surveys prior to the startup of Unit 2 and at least 1 survey during the 6-12 month transition period prior to startup of Unit 1. After Units 1 and 2 are on-line, there will be an annual update, including information on the effectiveness of the restoration and preservation efforts associated with wetlands mitigation. It is important to note that some mitigation and pollution prevention commitments are contingent upon certain events; if these events do not occur, the mitigation or pollution prevention commitments are no longer relevant.

The remainder of this MAP is an information template that DOE will use in consultation with the Industrial Partner to track the status and verification of mitigation and pollution prevention commitments associated with the JEA Circulating Fluidized Bed Combustor Project.

Copies of JEA-related documents (i.e., Final EIS, ROD) are available on DOE's NEPA Web Site ([tis.eh.doe.gov/nepa/](http://tis.eh.doe.gov/nepa/)). For further information or hard copies of these documents, please contact Dr. Jan Wachter, JEA NEPA Document Manager, U.S. Department of Energy, National Energy Technology Laboratory, 626 Cochrans Mill Road, Pittsburgh, PA 15236, telephone: (412) 386-4809, fax: (412) 386-4786, or e-mail: [jan.wachter@netl.doe.gov](mailto:jan.wachter@netl.doe.gov).

Mitigation or Pollution Prevention Action/Measure Contained in JEA ROD and EIS (Items in bold are specifically contained in ROD)	Status of Implementation and Actions Taken	Means of Verifying that Commitment Has Been Implemented (e.g., monitoring data, photographs)	Additi
<u>Action related to Land Use:</u> The project will be constructed to minimize impacts to the number, density, and species of trees. The planting of trees to replace those removed during construction is required under the city of Jacksonville's tree protection regulations. JEA will supply replacement trees from their tree farm to the local civic association for the latter to use wherever needed to implement the community's beautification program.			
<u>Action related to Air Quality:</u> During construction, vehicles and machinery will be equipped with standard pollution-control devices to minimize emissions. Dust suppression measures (i.e., watering) will be used to minimize the occurrence of fugitive dust during construction activities.			
<u>Action related to Air Quality:</u> During operation, the handling and transfer of coal, petroleum coke, and limestone at the site will generate PM-10 emissions. To reduce these emissions to acceptable levels, the project will minimize the number of handling and transfer points, enclose the conveyors and material unloading points, use wetting systems for particle suppression, and install collection devices such as baghouses.			
<b><u>Action related to Air Quality:</u> The circulating fluidized bed (CFB) combustor will use limestone injection to remove sulfur dioxide (SO<sub>2</sub>). A polishing scrubber on the flue gas stream will further remove SO<sub>2</sub>.</b>			
<b><u>Action related to Air Quality:</u> Compared with conventional boilers, the CFB combustor will produce less amounts of oxides of nitrogen (NO<sub>x</sub>) because of its lower flame temperature. Selective non-</b>			

catalytic reduction technology will be incorporated to further reduce NO <sub>x</sub> formation.			
<b><u>Action related to Air Quality:</u></b> Emissions of particle matter from the CFB combustor will be controlled using an electrostatic precipitator or a baghouse filter system.			
<b><u>Action related to Air Quality:</u></b> During the 6- to 12-month transition period when Unit 2 (i.e., JEA circulating fluidized bed combustor project) is on-line and before the Unit 1 repowering occurs, JEA will reduce maximum SO <sub>2</sub> emissions from the existing Unit 1 by nearly 93 percent. This will be accomplished through using a blend of natural gas and fuel oil with an SO <sub>2</sub> emission rate averaging no more than 0.143 lb/MBtu (effectively, a blend with a sulfur content averaging no more than 0.13%).			
<b><u>Action related to Air Quality:</u></b> JEA will reduce stack emissions (SO <sub>2</sub> , oxides of nitrogen, and particulates) from Northside Generating Units (Units 1, 2, and 3) by 10 percent compared to emissions during a recent 2-year operating period (1994-95) of the station (Units 1 and 3).			
<b><u>Action related to Groundwater Quality:</u></b> JEA will reduce total annual groundwater consumption at Northside Generating Station after Units 1 and 2 are repowered (as compared to 1996 levels) by 10 percent.			
<b><u>Action related to Groundwater Quality:</u></b> The currently unlined settling basins will be lined for the proposed project, and the supernatant from the settling basins will be routed to the reuse tank. On an occasional basis when the reuse tank is full, the overflow from the settling basins will be directed to the existing evaporation/percolation ponds and consequently to the surficial aquifer.			
<b><u>Action related to Surface Water Quality:</u></b>			

During construction, standard engineering practices such as straw berms, liners, cover materials, and grading will be implemented as required to minimize runoff, erosion, and sedimentation near the site. Accidental spills of construction materials such as solvents, paint, caulk, oil, and grease that could contain hazardous substances will be cleaned up in a timely manner in accordance with a spill prevention, control, and countermeasure plan.			
<u>Action related to Surface Water Quality:</u> Runoff from facilities that will be built as part of the project will be used in plant processes or routed through detention basins equipped with baffles or oil skimmers before being discharged at stormwater outfalls. The detention basins will reduce the maximum rate of stormwater discharge by increasing the length of time during which the discharge occurred. The baffles or oil skimmers will collect contaminants such as oil and grease that float on top of the stormwater.			
<u>Action related to Surface Water Quality:</u> Accidental spills from the project will be cleaned up in a timely manner in accordance with spill prevention, control, and countermeasure plan and the best management practices plan for the facility. Tanks containing liquids such as fuel oils, waste oils, turbine lubrication oils, and fuel additives will be either (1) surrounded by berms or dikes that will contain accidental leaks or spills, or (2) have controlled drainage areas whose runoff is routed to and collected in sumps. The sumps are piped into the wastewater treatment system. Rapid cleanup of any liquid impounded by secondary containment that did not enter the wastewater treatment system will minimize seepage into the groundwater.			
<u>Action related to Surface Water Quality:</u> Impacts associated with transfer piping failure or leakage will be minimized because (1) the piping will be routinely			

inspected on a daily basis and more frequently while pumping is in progress, and (2) most pipeline failures will manifest themselves as small-scale, gradually increasing leaks that will be detected during routine inspection before excess leakage will impact the environment.			
<u>Action related to Geological Resources:</u> Geotechnical site investigations will precede construction of any new major structures associated with the project. Such investigations will be designed to reveal any solution cavities within 100 ft of the surface that could cause the surface to collapse or subside appreciably. If a cavity were detected, collapse and subsidence at the surface will be prevented by filling the cavity.			
<u>Action related to Floodplains:</u> The land occupied by and immediately surrounding the repowered units will be sloped to promote drainage away from structures.			
<u>Action related to Wetlands:</u> Judicious placement of facilities will minimize potential impacts on wetlands. The site for the ash storage area will include a 200-ft buffer zone extending to the San Carlos Creek floodplain, which will minimize or avoid any impacts to the San Carlos Creek System.			
<b><u>Action related to Wetlands:</u> To offset the loss of 1.8 acres of wetlands during construction of the ash storage area, JEA will purchase slightly greater than 3 acres of wetlands from an off-site mitigation bank and will restore 1 acre of salt marsh (resulting in a mitigation ratio greater than 2.2 to 1 -- more than 4 acres of wetlands gained to 1.8 acres lost). In addition, JEA will set aside and preserve 14 acres of undisturbed, uplands maritime oak hammock along the west bank of San Carlos Creek.</b>			
<u>Action related to Ecological Resources:</u> Thermal discharges will not be expected to have a measurable effect on the biota of the			

area because the maximum circulating flow rates, condenser temperature rises, and total area of the discharge plume that are currently limited under an NPDES permit will be maintained. Bottom-dwelling organisms such as macroinvertebrates will not experience effects as a result of thermal discharges because the discharge plume will be directed upward and will largely be a surface phenomenon.			
<u>Action related to Aquatic Resources:</u> To mitigate impingement, a fish return system will continue to be in operation at Northside Generating Station. A 1994 study by the U.S. EPA concluded that this system represents the best available technology for mitigating impingement.			
<b><u>Action related to Ecological Resources:</u></b> <b>In order to prevent any juvenile turtle entrapment in the Northside Generating Station intake basin, JEA will install on the intake trash rakes a finer grid of mesh bars (welded wire screen on 6-inch centers contrasted to the current 12-inch centers).</b>			
<b><u>Action related to Ecological Resources:</u></b> <b>In order to prevent harm/entrapment of manatee populations (e.g., between docks and vessels), JEA will generate and execute a dock design (e.g., widely spaced support pilings, rather than one long continuous structure) that will allow sufficient space between vessels and the dock structure such that manatees could easily avoid being trapped.</b>			
<u>Action related to Ecological Resources.</u> Prior to construction, a gopher tortoise survey will be conducted to identify burrow that must be manually excavated, and the animals will be relocated according to conditions of the collecting permit from the Florida Game and Freshwater Fish Commission.			
<b><u>Action related to Transportation:</u></b> JEA will encourage car pooling and will suggest alternate routes in order to			

reduce the anticipated congestion associated with the section of Heckscher Drive from State Route 9A to Drummond Point.			
<b><u>Action related to Transportation:</u></b> JEA will monitor traffic (at the rear entrance of the site) on New Berlin Road, especially at the intersection of Ostner and New Berlin Roads, and to place a police officer at the intersection to direct traffic during peak times, if needed. Should the presence of a police officer prove inadequate to control project-induced traffic, JEA will pursue authorization of a temporary traffic signal at the intersection.			
<b><u>Action related to Noise:</u></b> JEA will install mufflers if high-pressure steam blowouts are conducted. Or, if mufflers are not installed, JEA will measure noise levels at the nearest residences to ensure that the levels conform to the Noise Pollution Control ordinance limits. JEA has historically implemented a public awareness program (e.g., advance notification) regarding high-pressure steam blowouts and will do so during the project, if necessary. JEA will also notify beforehand all residences within 0.5 mile of the high-pressure steam cleaning operation, This advisory will alert people to go inside to reduce the effects of the noise. As a mitigation measure, only daytime high-pressure steam blowouts will be permitted and non Sunday high-pressure steam blowouts will be allowed.			
<b><u>Action related to Noise:</u></b> During pile driving, JEA will use an enclosure technology or a less noisy type of pile driving (e.g., vibratory methods), as necessary, to ensure that the daytime construction noise level would not exceed 65 dB(A) at the nearest residences.			
<b><u>Action related to Noise:</u></b> JEA will install baffle silencers for the fans of the facility and enclose coal and limestone crushers in			



a sound-insulating building to reduce noise levels during operation to comply with the city of Jacksonville noise ordinance level of 60 dB(A) at any residence.			
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